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# SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE  
OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION  
FOR THE ADVANCEMENT OF SCIENCE.

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## THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

### COOPERATION AMONG AMERICAN GEOGRAPHICAL SOCIETIES.\*

IN considering the many ways in which the science having as its special province the study of the earth's surface can be enhanced and its service to mankind rendered more efficient through the agency of geographical societies, five subordinate themes present themselves for consideration. These are: The scope and aim of geography; the methods of gathering and distributing geographical knowledge; the functions of geographical societies; the present status of the geographical societies in America; and in what ways can the geographical societies of this country increase their influence and enlarge their usefulness?

#### THE SCOPE AND AIM OF GEOGRAPHY.

The proportions of a great mountain seem to vary according to the point of view of the beholder, and the impressions it makes on various minds also vary, as may be said, in reference to their sensitivity to thought-waves of different length. To the dweller in a vale at a mountain's base, its sublime slopes do not present the same picture that is beheld by the traveler on a neighboring plain; the impressions its weathered battlements awaken in the mind of the untutored savage have but a faint resemblance to the train of thought started

\* Address of the vice-president and chairman of Section E—Geology and Geography, Philadelphia, December, 1904.

into activity by the same stimulus in the brain of the geographer. When the name of the mountain is spoken, all of its attributes and all of its subjective influences may be conceived as being embodied in the word used.

In a similar way the word *geography* has many shades of meaning, according to the point of view and the training of the person using it. To the child at school, to the poet, the painter, the man of affairs, the scientific geographer, etc., the word does not have the same significance, and, in fact, in the different connections just suggested, might be thought to refer to widely different subject-matter. To some persons the mountain of earth-lore is far distant—a mere cloud on the horizon—while to other persons it is near at hand, overshadowing in its immensity, awe-inspiring in its magnificence, and its rugged slopes inscribed with the history of ages, while its summit is veiled from view in the cloud-land of the unknown.

The multiple interpretations that may be given to the word geography demand attention, but in order to learn the scope and aim of geography as a science, we turn to the explorers and investigators who have aided in its development. Answers to the question: What is geography? by several of its learned expounders were summarized by Charles R. Dryer,\* and a concrete definition extracted from them which reads: *Geography is the science which deals with the distribution of every feature and the environment of every creature on the face of the earth.* The meaning of this crystallized statement is more fully shown in the admirable address referred to by enumerating the several subordinate parts of which geography is the symmetrical whole. These are:

\* Charles R. Dryer, 'What is Geography?' An address before the Southern Illinois Educational Council at Carbondale, October 23, 1903, *Teachers' Journal*, Marion, Ind.

1. The earth as a planet: its form, dimensions, motions and relations to the sun.
2. The land: its outline and relief; the distribution of its surface forms, including streams and lakes.
3. The sea: its outline, depth and contents; the properties and movements of seawater.
4. The atmosphere: its properties, conditions and movements, and their results as manifested in climate.
5. Plants and animals; their distribution.
6. Man: the distribution and movements of peoples; human conditions, industries, structures and, to some extent, institutions.

While it is no doubt necessary to divide and subdivide the science of the cosmos, both for convenience of study and in order to bring the magnificent whole within the range of human comprehension, the rigid lines established for these and kindred purposes, it should always be remembered, are artificial and nearly always indefinite. There is no inter-science law, corresponding with international agreements, which fixes their bounds. Every student of nature must feel that he can visit his neighbor's fields without being considered a trespasser, and be at liberty to pluck the flowers of truth growing there without being branded a thief. From the hard, dry formulas cited above—although fully appreciating the logical plan for earth-study outlined by them—I would remove the implied limitations as to space and time and introduce perspective. Not only the study of the distribution of land and water, of plants and animals, etc., at the present day should be free to the geographer, but the many combinations of conditions and processes which have led to the present order of things should come within the range of his vision. The 'life history' of every feature of the earth's surface, and the 'life-work' of every process by which those features have been fashioned, together with the

changes still in progress, as well as glimpses into the future, are to be numbered among the fascinating problems geography has to present. To the study of the earth's surface may well be added the light, color and motions which give that surface its beauty and variety. I would have the geographer feel that the thoughts of a poet greater than Milton, who 'with no middle flight intends to soar,' are interwoven with the bare statement that the study of earth includes its form, dimensions, motions and relation to the sun. The picture these words outline in the mind reveals a mighty globe, without visible support, revolving in space, and an orderly ebb and flow of its surface waters, in obedience to the same intangible power of gravity; the silent daily change from light to shadow; the pulse-beat of the seasons; the advance and retreat of secular changes in each of these orderly revolutions—all this and more, so magnificent and so inspiring that it can scarce be thought, much less spoken, is by inheritance the right of the geographer and should not be denied him. The earth, like the wayside flower, has a life history, and a search for the records of its birth and growth is of interest to the geographer, even if not included in the strict time limits granted him, and he should have freedom to follow his thoughts wherever they lead. Nor is this all; the geographer who no middle course intends to take, must reach out for the sun and all his attending planets, and search the realm of distant space for meteors, nebulae, star-clusters and cosmic mists, which in any way may aid in interpreting the story of the earth's evolution. So also in the study of the land, the sea, the atmosphere, and the relation of these to life, and to human history, I would bid the geographer remember that the earth's surface is not fixed and rigid, a dead, motionless thing, but ever changing in response perhaps to the fall of a rain-

drop or an eruption of Krakatoa, and that it is clothed with beauty of both form and color, and whispers with a thousand tongues to the admirer who inclines a listening ear.

What then is geography? The study of the distribution of earth features and of the environment of living things, to be sure, but also the reading of the fascinating story of the development of those features, and a search for the complex antecedent conditions which gave birth to the present marvelously delicate adjustment of life to its environment. Illuminating this temple not made by hands are pictures of the earth-beautiful, and the many charms that are imparted to nature-study by all that is lovely in form and color, and fascinating by reason of sound or motion on the still developing earth's surface with which man's life is linked and of which his body is a part.

#### GATHERING AND DISTRIBUTING GEOGRAPHICAL KNOWLEDGE.

The chief aim of the geographer being to gain all possible knowledge of the earth's surface as it exists to-day, and of the history of the changes which resulted in the present order of things, the question presents itself: How is this knowledge to be acquired, and what is to be done with the harvest when reaped?

The popular idea in reference to methods of acquiring geographical knowledge is, no doubt, to traverse unknown lands, make voyages in Arctic and Antarctic seas, and scale mountains never before pressed by human foot. Such enterprises, however, although laudable and commendable in themselves, can not be considered as the most noble or most fruitful of geographical explorations. Geographical advances are to be made not only by crossing ice-fields and climbing mountains, but by excursions into the realm of ideas as well. A modern phase of the science consists in tracing the

successive changes various features of the earth's surface have passed through, and in noting the orderly sequence of events produced by the moving agencies still active in modifying and molding the earth's features. This search culminates in the study of the relation of life, and particularly of man to surrounding physical conditions. While the explorer of new lands gathers facts, the philosophical geographer arranges those facts in orderly sequence, interprets their meaning and deduces from them hypotheses, which have for their purpose the discovery of the laws of nature. It is the formulating and elucidating of these laws which constitutes the noblest aim of geographical science. This philosophical stage in the growth of geography has but recently been entered upon, and is the one which is to claim the greatest share of attention in the future.

From this as yet not generally recognized point of view, it appears that fresh fields for exploration surround us on every hand. Some of the most important advances in geography yet made can be claimed as the fruits of home study rather than resulting from explorations in new lands, although based on and supported by extensive field investigations.

Illustrations of this thesis are: the base-level idea, which was given concrete shape and stamped with a name by Powell, the important principle embodied in the term geographical cycle, coined by Davis, and the laws of stream erosion, transportation and deposition so admirably formulated by Gilbert. These and other far-reaching and, as it seems, universal and everlasting doctrines render transparent the clouds which before shadowed familiar scenes and impart to them new significance. The lands to be explored by the scientific geographer encompass us on every hand, and the sea has only just begun to yield up its secrets.

The gaining of geographical knowledge

at first hand, or geographical research, consists, then, of both journeying and thinking, and the two are inseparable in order to secure the highest results.

To the question: What is to be done with the fruits of geographical studies when gathered? I could answer curtly: Give them away. Sow the seeds of knowledge broadcast in the minds of men, with faith that some of them will germinate there and multiply a thousandfold. In the harvest of the future, as we may be assured from the principle termed mutation by biologists, every seed will not have reproduced its kind, but new species will appear and rank among the discoveries of the future.

As to methods of geographical research pertaining to individuals, or combinations of individuals, as in organized expeditions or surveys, and the various ways of publishing the results of such undertakings, attention is here invited to only one phase, namely:

#### THE FUNCTIONS OF GEOGRAPHICAL SOCIETIES.

*Aids to Exploration and Research.*—As shown by the histories of geographical societies and most prominently by the records of the Royal Geographical Society of London, the mother of them all, they have been most sympathetic to the adventurer and explorer, and have aided in many instances not only directly from their treasuries, but perhaps still more efficiently through their influence on legislation, in starting individual travelers on their way and equipping exploring expeditions. Incident to such direct material aid have been more or less successful attempts to train explorers for this work and furnish them with instructions as to ways of conducting it. The word 'unexplored' has not as yet been erased from our globes, and many mountain peaks are as yet unconquered; the privilege of assisting in such tasks is

still open to geographical societies, and by some persons may even now be considered as the chief aim they should have in view.

With the change from traversing unknown areas to exploring the domain of ideas, which made geography a science, the sphere of usefulness of the geographical society has been vastly enlarged and new duties placed upon it. Thus far, however, geographical societies do not seem to have awakened to the full realization of the dignity of this new life, and the vast possibilities it opens for their own growth and elevation. It needs no argument to show that it is a duty of a society having the study of the earth's surface for its chosen field, to foster and encourage geographical research in the laboratory and library, in cultivated fields, and amid hills and valleys, just as truly as it is to aid the African explorer or encourage the mountaineer who would scale Mount Everest.

To be reckoned among the functions of geographical societies, is the search for the exceptional man, not only he of strength of limb who can climb mountains, and of great endurance who can brave the perils of ice-fields or tropical jungles, but the man of broad philosophical ideas and logical mind, who can correlate the facts explorers gather, supplement them by his own field-studies, and deduce from them the laws that have governed the earth's development and still control the winds, the streams, the glaciers and other agencies by which the earth's surface is being modified and changed.

The corner-stone of every geographical society should, therefore, be geographical research, under which term systematic endeavor to enhance any branch of geographical knowledge is included.

*Diffusion of Geographical Knowledge.*—While an increase in knowledge should be the leading ambition of geographical societies, their greatest activity and chief ex-

ertion, as shown by their histories, has been in the direction of spreading or disseminating knowledge already acquired. Activity in this direction is highly commendable and should be encouraged, as it is a most important function; but it is an outcome of research and occupies a lower plane. The means for disseminating knowledge available for geographical societies, as is well known, are: Both popular and scientific meetings, public lectures, field excursions, joint sessions of two or more societies, international congresses, together with the printing and distributing of journals, proceedings, magazines, etc.

Intimately connected with the distribution of a special kind of knowledge from a given center, is the gathering together at that center the records pertaining to the specific aim in view distributed from other centers. One function of a geographical society is, therefore, to maintain libraries of books, maps, charts, and, also, in these later days, of photographs. Necessitated by this and other functions is the ownership or control of a building suitable for library purposes, places of meeting, etc.

*Individual Conferences.*—All the functions of geographical societies have not been stated, however, when the aids they offer to exploration and study, and their various means of publication are reviewed. There is an important and wide-reaching influence which results from the personal contact and friendly exchange of ideas and experiences between persons engaged in the same or similar lines of work. It is seemingly this phase of the social instinct of mankind, more than any other element in scientific cooperation, which leads to the organizing of geographical societies, and serves to hold their members to a common purpose. The importance and value of the contact of man with man, while dependent mainly on the personalities, breadth of experience and richness of

ideas of the men themselves, also influenced in a favorable way by an increase in the number, and a widening of the geographical range, of the persons of the same cult who are thus affiliated. In general, it may be said of the gatherings of geographers, and of those interested in their work, that the good resulting increases in more than a simple ratio with increase in numbers and with a broadening of habitat. The trustworthiness of these statements finds support in the success of the several international geographical congresses that have been held, and is illustrated by the results of the recent International Congress of Arts and Science assembled at the Universal Exposition at St. Louis.

*Awakening Interest in Geography.*—Still another important function of geographical societies is the influence they exert in awakening and stimulating interest concerning the wonders and beauties of the earth in the minds of the people forming the communities where they are located. By thus catering to the curiosity of people they may be led to inquire more closely into the aims of geographers. This function is analogous to the process of creating a demand in the commercial world, and is not beneath the dignity of a geographical society. Agencies in this direction and exhibitions of maps, photographs, etc., of countries on which public attention is centered, be it South Africa or Manchuria; collections illustrating the industries of such countries, or a similar gathering together of antiquities, etc. The most common of such exhibits is the placing on the platform at a popular gathering, of an explorer or traveler, who, it may be whispered in some instances, awakens greater curiosity personally than for the additions he has made to geography.

*Influence on Legislation.*—Among the functions of geographical societies is also

included the influence they exert or should possess in reference to advising legislative bodies concerning the aid they are asked to extend to expeditions, surveys and research along various geographic lines, in order that public funds available for such purposes may be wisely expended. The recognition of the public importance of several European geographical societies is expressed in their names. One of the functions of the National Academy of Sciences of the United States, in which geography is represented, is to advise congress in reference to scientific matters which have a bearing on legislation or demand legislative enactments. Geographical societies, however, which have no organic connection with governments, may influence their action and lead them to foster and promote geographical work, either directly by means of petitions, or indirectly through the personal exertions of their members, as well as by means of the public press, and in other ways. In the exercise of this function also, large membership and an extensive habitat, greatly enhance the good a geographical society can do, and increases in more than a simple ratio with increase in its membership and the breadth of the region from which its members are recruited.

To summarize: The principal functions of geographical societies are: The encouragement of exploration and research; the holding of meetings for the presentation of information on geographical matters, and eliciting discussion; public lectures; field excursions, etc.; publication of instructive geographical reports, essays, maps, etc.; maintenance of libraries; facilitating personal conferences between men engaged in like explorations or investigations; the stimulating of public interest in matters geographical; and the education of legislators as to the relation of geography to human advancement. Even this

suggestive summary does not exhaust the subject in hand; the recognition of work well done, as when a geographical society bestows a medal on an explorer; the assumption of the duties of an executor, as when such a society administers a legacy; the opening of halls for the exhibition of loan collections of various kinds, etc., show that the functions of geographical societies are still wider and more varied than can be discussed at this time.

In connection with this summary, I desire to emphasize the fact, as has already been done in part, that in the exercise of several, if not all its functions, the power of a geographical society to do good and enhance the welfare of mankind increases both with the growth of its ideals and with its increase in numbers.

That the importance and influence of such a society of necessity increase with the lengthening of its roll of members may not be true, but as even the laymen in a society have expressed by the act of becoming members their interest in the ideals for which it stands, and furnish the principal part of the audience to which its professional members address their talks and writings, they furnishing a desirable means for disseminating knowledge, and in this, if in no other way, aid in the fulfilment of the tasks geographical societies undertake. The mere fact that persons interested in geography unite to form societies is, in itself, evidence that by means of such cooperation something is gained which is denied the isolated individual, and so far as experience suggests there is no upper limit to the number that can to advantage unite their efforts in this manner.

#### THE PRESENT STATUS OF GEOGRAPHICAL SOCIETIES IN NORTH AMERICA.

The leading functions of geographical societies being, as all persons will, I think, concede, the increase and diffusion of geo-

graphical knowledge, the inquiry comes home to us: How well are the geographical societies of America fulfilling the purposes for which they exist?

After considerable exploration—analogous to that involved in traversing a new land—but greatly assisted by a recently published paper on the 'Geographical Societies of America,' by J. Paul Goode,\* I find that in North America at the present time there are not less than seventeen societies, associations and clubs which have geography in some form as the chief bond which unites their members. A list of these several organizations, together with certain data concerning them, is presented on the next page.

The distribution of these societies, as is indicated in the table, includes in an east and west direction, Boston and San Francisco, and its range in latitude is from Washington to Quebec on the east, and from San Francisco to Seattle on the west. In view of the fact that geography is concerned with the distribution and environment of living things, the narrow belt as measured in latitude inhabited by our geographical societies is suggestive. What are the climatic and other conditions peculiar to this belt of nine degrees, which make it prolific in geographical societies, while the vast region to the north and a nearly equal extent of land to the south are barren in this particular?

Of the organizations referred to, there are perhaps ten which, as declared by their constitution and made evident by their work, can reasonably claim recognition as geographical societies; the remainder are of the nature of social clubs, with geographical features, rather than societies having for their leading aim an earnest de-

\* *The Journal of Geography*, Vol. II., 1903, pp. 343-350; Vol. III., 1904, p. 44.

† Quoted from the article by J. Paul Goode, cited above.

## LIST OF GEOGRAPHICAL SOCIETIES.

Name.	Location.	Number of Active Members.	Books and Maps in Library.	Annual Dues.	Initiation Fee.	Life Membership.
Alaska Geographical Society† .....	Seattle.	1,200?	.....	\$2.00	.....	.....
American Alpine Club.....	(Organization incomplete.)	.....	.....	5.00	.....	.....
American Climatological Association.....	.....	140	.....	7.50	\$1.00	.....
American Geographical Society.....	New York.	1,300	{ 40,000 books. 12,000 maps. }	10.00	.....	\$100.00
Appalachian Mountain Club.....	Boston.	1,500	{ 2,000 books. 1,500 maps. }	4.00	4.00	50.00
Explorer's Club.....	New York. (Organization incomplete.)	.....	.....	.....	.....	.....
Geographical Society of Baltimore†.....	Baltimore.	1,725	.....	1.00	.....	.....
Geographical Society of California.....	San Francisco.	?	.....	5.00	.....	100.00
Geographical Society of Chicago .....	Chicago.	65	.....	2.00	.....	25.00
Geographical Society of the Pacific .....	San Francisco.	?	{ 4,822 books. 274 maps. }	6.00	.....	100.00
Geographical Society of Philadelphia...	Philadelphia.	537	900 books.	5.00	.....	50.00
Harvard Travelers' Club .....	Cambridge, Mass.	140	.....	2.00	5.00	25.00
Mazama Mountain Club .....	Portland, Ore.	100	{ 100 books. 50 maps. }	2.00	.....	25.00
National Geographic Society.....	Washington.	3,375	1,500 books.	2.00	.....	50.00
Pele Club .....	(Organization incomplete)	.....	.....	.....	.....	.....
Quebec Geographical Society † .....	Quebec.	200	.....	.....	.....	.....
Sierra Club.....	San Francisco.	760	.....	3.00	.....	50.00

sire to increase and diffuse geographical knowledge. The combined active membership of what may be termed *bona fide* geographical societies is over nine thousand. This number in itself is significant of a wide popular interest in geographical matters, particularly among the people of the United States. The condition next in importance to interest in geography, which leads to the organization of geographical societies, is evidently concentration of population. Each of our geographical societies has its home in a large city. It is probable, however, that there are many, many thousands of people outside the cities in which the societies referred to are located, who would join similar organizations if it were practicable for them to attend their meetings. In planning for the extension of geographical societies in the future this great but widely scattered demand needs to receive serious attention.

As is no doubt familiar to most of my readers, our geographical societies have extended important aid to exploration, and in the case of at least two societies, namely, the American Geographical Society and the National Geographic Society, the record in this respect is an honorable one.

In reference to aid extended to geographical research, when not directly associated with or forming a part of the work of an expedition, I have inquired in vain for evidence that our societies have either expended money directly or by awarding medals or by other similar means recognized the labor of those who have striven diligently and successfully to explore the domain of philosophical geography.\* Here again an extensive field for enlarging the usefulness of our societies makes itself

\* An exception should here be made in recognition of the Elisha Hunt Haner Medal of the Geographical Society of Philadelphia, founded 'for encouragement of geographical research.'

manifest. As shown by a considerable body of evidence that has been gathered, and as is a matter of current knowledge, the greatest efforts our societies have made have been in the direction of disseminating geographical information and attracting popular attention to the results explorers and travelers have brought home. During the year 1903 our geographical societies, clubs, etc., held a total of over 60 home meetings, in part scientific and in part popular; conducted not less than 44 public lectures, and engaged in about 16 field meetings. In addition to these direct methods of spreading information, mostly by addresses and lectures, our societies publish on an average approximating 2,000 octavo pages of printed matter each year. These statistics certainly make a favorable showing, and furnish hopeful signs by which to judge of the possibilities of the future.

The net results just referred to, however, pertain to quantity, not quality. The quality of the work our geographical societies are doing is difficult of even approximate determination, since there is no generally accepted standard of measurement available. This is also a delicate matter to discuss, for the reason that local pride and personal ambition are involved. Certain general conclusions, in this connection, however, seem too evident to be in danger of challenge.

The quality of a popular lecture may be said to be good, when its theme is entertaining and instructive, its presentation clear and forceful, and so adjusted to the audience addressed as to hold its attention and lead to logical and consecutive thought concerning the ideas presented. Since a popular lecture has for its principal aim the dissemination of knowledge, its success depends in a large measure on the number of persons who hear it. Judged from this composite standard, the lectures delivered

under the auspices of our geographical societies must in general be adjudged good and their influence wide reaching.

The quality of a scientific session of a geographical society for the purpose of presenting and discussing the results of exploration or the conclusions obtained by painstaking research, may be said to be good when the subject-matter is a contribution to previous knowledge. Added to this quality there should be intelligent and suggestive discussion, bringing to the front various points of view, and showing incidentally whether or not the principal speakers have presented their ideas clearly and logically. The success of a scientific meeting is also to be judged, to a considerable extent at least, by the number of persons in attendance, since one aim, and in general the main desire, is the diffusion of knowledge. Judged by these standards the meetings of our geographical societies must be accredited with having added important truths to the world's store of knowledge and to have exerted a beneficent influence on thought and methods of thinking. In large part, however, the degree of success in the case of the meetings in question has been less than could have been desired, owing to the small measure of encouragement extended by our geographical societies to research, lack of adequate preparation on the part of the audience, and as an element necessary to the dissemination of knowledge, the smallness of the assemblies usually in attendance when questions bearing on scientific geography are discussed.

Success in the case of the publications of geographical societies lies mainly in two directions, one the importance of the additions made to knowledge, and the other the extent to which knowledge is distributed. The pages printed are in the main either popular or scientific, but the highest ideal, as I think may justly be claimed, is at-

tained when both of these properties are combined in an individual production. Enhancing the value and usefulness of the publications referred to is their degree of perfection as books, the facility with which they can be had for reading or reference, and the wideness of their distribution.

Turning to the publications of our geographic societies with these ideas in mind, we find less ground for congratulation than in reference to the lectures and the meetings held under their auspices. Without attempting to illustrate by specific examples, it can, I think, be claimed by an impartial critic that the publications of our geographical societies, when judged as attempts to popularize geographical knowledge, in general lack literary merit, are merely descriptive and do not consistently and with subtlety of purpose lead the reader on to think for himself. As contributions to geographical research the publications referred to clearly contain a few papers that are direct and first-hand additions to science, but the number of such papers is few. Our leaders in geographical research do not as a rule seem to consider the publications of our geographical societies favorable places for putting their results on record.

In reference to the publications under consideration, as specimens of the bookmakers' art, they, as a rule, fall below the standard of the better class of literary magazines. Their appearance is in general not attractive, the illustrations in many instances have not been wisely chosen, and, in general, have been poorly reproduced.

As to the distribution and accessibility to the publications under consideration, it is evident that they are not widely known, and although exchanged with scientific societies in this and other lands, they do not find their way into public, collegiate and private libraries to the extent that could be wished. In part, this lack of what may

be termed efficiency comes from the comparatively large number of journals, magazines, proceedings, etc., issued, the lack of demand for the kind of information they contain, and the fact that they are too weak to win their way and attract readers in the face of the competition of scientific writings printed in more attractive and convenient forms. In brief, the efforts of our geographical societies in the direction of publication are widely scattered, in large part the bulletins, etc., issued appear at irregular intervals, are repellent rather than attractive in dress, and in large part are weak when considered as either literary or scientific productions, and do not attain the standard that may reasonably be demanded.

As a summary of the defects of our present system I venture to insist that our geographical societies are not only lacking in unity of purpose, but are antagonistic rather than cooperative. Their influence in each case is local, and their aims narrow and ill defined. In no case has research, the true foundation of geography as a science, been made a prominent feature, and never, so far as I have been able to learn, has it received direct financial aid or popular recognition. Owing to the local character of the societies in question and the narrowness of their respective habitats, the facilities they furnish for men to become acquainted with their fellow workers are much less than could be desired. But the most glaring failures are evident in the general weakness of the publications issued, and the inefficiency of the means employed for their distribution.

This unsatisfactory but perhaps somewhat biased summary brings me to the last subdivision of my theme, namely, the inquiry—

HOW CAN THE EFFICIENCY OF OUR GEOGRAPHICAL SOCIETIES BE ENHANCED?

The chief defects in the present status of our geographical societies being as it appears lack of cooperation, low standards in reference to geographical research and inefficiency in publication, efforts at improvement should be mainly in these directions.

The proposition has been made that by organizing a strictly scientific society with geographical or, as it seems, more precisely physiographical research as its chief aim, membership to be restricted to what may be termed professional geographers, all that can be hoped for in the direction of assisting in the study of the earth's surface in this country by means of such cooperation might be attained. It is at once apparent, however, that such a course would be the adding of one more to the already long list of American geographical societies, thus tending not only to render still more diffuse the amount of energy available for geographical work, but to eliminate the more advanced students of geography from the existing geographical societies, and thus deprive them of the leaven, as it were, which is essential to their progress. The new society having research for its chief end, could not be expected to make exertions in the direction of popularizing geography, and thus aiding in the diffusion of geographical knowledge, which is the chief purpose of many of our existing geographical societies. It can be reasonably claimed, I think, that a geographical society will attain the largest measure of success when it carries on the work of adding to geographical knowledge and the task of popularizing and distributing such knowledge at the same time, as one branch of the operation assists and stimulates the other. Then, too, the proposed society, having research in geography as its chief function, and not being open to non-professional geographers, would, of necessity, be small in numbers,

and the expense of maintaining it would fall entirely on geographical investigators whose financial resources, as is generally understood, are meager.

It may also be mentioned in the above connection that the Geological Society of America welcomes technical papers pertaining to most geographical subjects, and will give them a place in its bulletin. Similar courtesies are also freely extended by *The Journal of Geology* and several other scientific periodicals. This greatly lessens the demands of skilled geographers for opportunities to make their results known.

Another plan which contemplates the reorganization of our geographical societies, providing it can be satisfactorily adjusted to the interests of all concerned, has for its chief feature the union of all the geographical societies of North America with the oldest in the list, namely, the American Geographical Society. Under this plan each society effecting such a union would become a chapter of the home society, but retain its own organization and its own property, but unite with the parent society in holding annual meetings and in publishing a monthly magazine. This plan has many commendable features when followed out in detail, and differs but little in its aims from the alternative plan proposed below. The general bearings of each of these schemes for enhancing the welfare of our geographical science will be considered later.

The alternative plan just mentioned is for the several geographical societies now in existence, and such other similar societies as may be organized in North America, while retaining their individual names and autonomy, to unite in a brotherhood of societies to be designated by some appropriate name, as, for example, *The League of American Geographical Societies*, which should provide for one general meeting or congress each year, at such centers of geo-

graphical interest as may be decided on, and assume the duty for publishing for all of the affiliated societies. Suggestions more in detail which point the way for securing such cooperation are here presented, it being understood that the first step would be the holding of a convention, at which representatives of each society which might desire to join the league should be present and assist in framing a constitution and by-laws.

A preliminary plan for the organization of such a league as just suggested can at least be outlined at the present time and be made a subject for discussion.

Let the president of each affiliated society be *ex officio* a vice-president of the league. Let each affiliated society elect a member of the council of the league for each 500 of its members in excess of 1,000. Such councilors, together with the vice-presidents, to elect each year a president, secretary, editor and treasurer from the members of the affiliated societies not of their own number. The president, vice-presidents, secretary and elected councilors to constitute an executive council for transacting all business relating to the management of the league.

The functions of the league would be the holding of an annual congress open to all the members of the affiliated societies for the purpose of reading and discussing papers, etc., and the publishing of a monthly magazine or other journal to take the place of the publications previously issued by the several affiliated societies. The expense of each annual congress to be borne by the members in attendance, and the cost of the magazine to be shared by the affiliated societies in proportion to their active membership.

The executive council referred to should have the power to receive into the league additional societies as it sees fit, and to arrange for the enrollment of members who

are not on the list of any affiliated society.

Under either of the plans just proposed, namely, a union of various societies in one American geographical society, or a league of societies, the leading advantages to be expected are such as would flow from, (1) an annual congress of American geographers in addition to our present local meetings, and (2) concentration of publications.

1. The advantage of an annual congress, as may be predicted, would be large audiences with wide geographical representation, favorable opportunities for personal conferences and the cementation of friendships, and the encouragement that large and representative gatherings would extend to explorers and investigators to present the best fruits of their labors. To these gains should be added the stimulus such a congress would have in the home cities of the affiliated societies, at which sessions would be held, thus tending each year in an important way to extend the influence and enlarge the membership of some one local society. The greater influence on legislation to be expected from the combined voices of many societies over the efforts of any single, local society, suggests a practically new field of usefulness to the geographers of America.

The chief objections that arise in reference to holding an annual congress of American geographers are two in number: First, the large number of similar meetings now held each year, with which many geographers are more or less closely identified. Whether it is desirable to endeavor to promote still farther this plan of scientific development is indeed a serious question, and one that calls for discussion. The second objection is, that owing to the wide geographical distribution of our geographical societies, the proposed annual meetings would be but meagerly attended by the members of the affiliated societies located at a distance from the chosen places of

meeting. Owing to the conditions existing, there would no doubt be a tendency to divide the annual congress into two sections, as has been done in the case of the Geological Society of America; one to hold its meetings on the Pacific and the other on the Atlantic coast. Such a division would lessen the influences for good, for which the congress would be organized, and demands careful consideration.

2. The gains to be expected from a concentration of publications are, to a marked degree, expressed by the fact that the proposed magazine, in case all of our geographical societies united in its support, would start with a circulation in excess of ten thousand, not including libraries or subscribers not members of the affiliated societies. With such a vigorous start rapid growth and a constantly widening influence for many years to come may reasonably be predicted. In the list of advantages is to be mentioned also the desirability of having a large body of correlated information in one series of volumes, instead of in many series, thus securing ready reference, and conferring a blessing on future generations of geographical workers. Perhaps the greatest gain to be hoped for, however, is in the direction of a higher tone and better preparation, that a widely recognized, well edited, well printed and well illustrated magazine would have over the for the most part obscure and indifferently printed proceedings, journals, magazines, bulletins, etc., now issued. Another and important advantage which the proposed magazine would have over several of the publications which it would replace, would be the securing of the services of a competent editor, who should receive adequate compensation for his labor. Again, it may reasonably be expected that an attractive geographical magazine would replace to a considerable extent the popular literary magazines of to-day, and secure a

large number of readers outside of the societies from which it derived its main support. A magazine having for its aim the diffusion of all branches of geographical knowledge would be welcomed by tens of thousands of our school teachers and other intelligent people in isolated communities who are debarred from oral instruction by leaders in geographical exploration and research.

In reference to the financial aspect of the proposed scheme, it seems self-evident that at least as great a sum of good as is now attained could be secured at less expense, since duplication of reviews, news items, lists of new books, maps, etc., and, to a considerable extent, of matter contained in leading articles, could be avoided; and, also, because one editor would take the place of several editors. Again, the new magazine, by having a wider circulation than any one, and, as may reasonably be expected, in excess of all the publications it would replace, would be enabled to secure an important revenue from advertisements.

One reason for the failure of our present geographical publications to secure a wide circulation outside the immediate members of the respective societies issuing them is, as it seems, lack of business management, coupled with the fact that the enterprise in hand in most instances is too small to be worth energetic exploiting. The publications referred to are not brought before the public in the manner in which literary magazines are promoted, or advertised in the various ways familiar to book publishers. With the proposed concentration of publications there would also be a concentration of effort in the direction of marketing the products of the several affiliated societies, which all persons interested in the matter must agree could not fail to be far more efficient than the present method, or rather want of method, in that direction.

In this connection, it may be suggested that some plan for having the proposed magazine issued by an influential publishing house demands careful consideration.

An objector to the proposed plan of concentrating geographical publications may, perhaps, say that the standard of the new magazine with its world-wide field and high aims, would tend to discourage the modest student who has his maiden paper to present, and could not afford space for the ambitious amateur who desires to see his name in print. For one, I would meet these objections by admitting their truthfulness, but claim that in the end good would result. The new magazine should be under rigid censorship, in reference to the scientific quality and literary merit of the matter presented. While these safeguards would demand greater care and more serious effort than at present on the part of contributors, they would not debar any one whose work had merit, but serve rather to stimulate all geographers who desire to put the results of their labors on record to strive for high ideals.

From the point of view of the existing geographical societies, it may be claimed that they have developed in response to certain local demands, are adjusted to the conditions that gave them birth, and serve the communities in which they are located better than could be expected if they were more or less merged in a larger organization. Such contentions are no doubt true except perhaps as to the validity of the last clause. The proposed change does not require of any local society or club the obliteration of its individuality. Under the plan for uniting all or a large number of our local societies in one truly American geographical society, there would, of course, be a change of name. If a league were organized present names could be retained and simply another process of publication initiated. The aim in either case should

be to maintain the individuality of each affiliated society, and an endeavor to make it if possible even better adapted to local needs than at present. An important aid in this direction (as already suggested) would result from the influence of the general meetings that would be held at the homes of the various chapters or affiliated societies. Such meetings, as may be judged from the history of the American Association for the Advancement of Science, would stimulate interest in the local chapters to a high degree.

Then, too, a strong, well written and well edited and well illustrated geographical magazine, by presenting a wide view of geography and of its many contacts with other interests, may reasonably be expected to exert a wider influence even in the home city of an affiliated society than any strictly home journal.

In addition to the richer harvest to be expected from an annual congress of American geographers and a jointly published magazine as just considered, earnest and active cooperation among our geographical societies, as may reasonably be expected from such concentration of energy, should lead to their taking the initiative in several other directions. Among such hopes of the future is the securing of a map of North America on a scale of 1/1,000,000, as a contribution to the map of the world in the completion of which certain European societies are interested. Another desirable undertaking would be the publication of detailed instructions for the use of travelers and others, as to how and what to observe, in reference especially to the securing of the best possible illustrations of the results of known physiographic processes, and the recording of facts which are likely to lead to the discovery of new laws. Again, time and money might well be expended in preparing and publishing a dictionary of

geographical terms; a bibliography of geographical literature; in assembling a library of photographs, particularly of regions where geographical changes are most active, and in yet other directions.

Beyond the immediate and individual interests of a geographical society, or, what is more strictly true, perhaps, in most instances, the personal ambitions of a few of the members of such a society, is the broader and nobler aim of increasing man's knowledge of his dwelling place, and of widely diffusing such knowledge. In order to cultivate this larger field, the local society may reasonably be asked to relinquish, if necessary, some of its local prerogatives and look for compensation in the general advance that would be facilitated thereby. Among such restrictions the fact is to be recognized that should a society cease to publish directly, its returns from an exchange of publications with other societies would cease. Compensation for such losses might perhaps be looked for in a decrease of expenses for editing and printing, and might be made good by placing all the 'exchanges' received in return for the proposed magazine in the custody of some one society and thus striving to maintain one complete geographical library, which could be consulted directly, or its books, maps, etc., loaned to individual students.

In proposing the application of modern business methods in the concentration of geographical factories, as our societies may be termed, I wish to direct attention to the fact that geography more than any other science is best adapted for the purpose of general or popular education. Added to the fascinations of exploration we now have the equally absorbing results of scientific physical geography, pertaining to the fields through which we walk, the brook whose murmurs have appealed to us since childhood, the waves that beat on the shore

where we perhaps spend our vacations, and many other equally familiar scenes. The ability to read the history of the earth at first hand should be within the reach of every civilized man, woman and child. It is in order to secure to all the people in North America this means of public education, coupled with never ending pleasure and a constantly expanding mental horizon, that our geographical societies are asked to unite their efforts.

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#### SECTION E—GEOLOGY AND GEOGRAPHY.

GEOLOGY and geography together occupied a large share of the attention of the members of the American Association for the Advancement of Science at the third Philadelphia meeting of the association, which was held at the University of Pennsylvania, December 28–31, 1904. Section E, 'Geology and Geography,' of the association held its regular meeting on December 28, the principal feature of which was the address of the retiring vice-president, Professor Israel C. Russell, of Michigan University, on 'Cooperation among the American Geographical Societies. The following delegates were appointed to represent the societies named, in the consideration of Vice-President Russell's address: for the American Geographical Society, Cyrus C. Adams, of New York; for the Chicago Geographical Society, Professor J. P. Goode, of Chicago; for the American Climatological Association, Dr. W. F. R. Phillips, of Washington, and Dr. J. C. Wilson, of Philadelphia; for the American Alpine Club, Professor Angelo Heilprin, of Philadelphia; for the Harvard Travelers' Club, Professor W. M. Davis, of Cambridge; for Mazamas, Dr. T. Brook White, of Washington; for the Pelé Club, Professor Robert T. Hill, of New York.

The general program was introduced by